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FACT SHEET

ARMY DEVELOPING HIGH PRESSURE INJECTION APPARATUS

A multiple dose high-pressure injection apparatus for use in mass inoculation programs is now in the advanced experimental stages in the United States Army Medical Research and Graduate School in Washington, D. C.

Considered feasible for administering bacterial vaccines or antibiotics, the device could do all the hypodermic needle can do in this line, and do it virtually without pain. It is reasoned that besides doing away with the pain and psychological hazard of the hypodermic needle, jet injection would have important advantages.

With a multiple dose apparatus, large numbers of people could be given protective vaccines or medication in a short time. This consideration is particularly applicable to Civilian Defense efforts in the event of atomic bombings or other disasters affecting entire communities.

In using hypodermic needles for mass inoculation there is some danger of cross-infection. The jet method eliminates that problem. When perfected and produced in quantity, it is hoped the jet injection apparatus will be relatively inexpensive.

First development was a hand-cocking, single-shot instrument called Hypo-Spray. While Hypo-Spray offers obvious advantages, especially in civilian practice where one patient is usually treated at a time, it holds only one charge and must be reloaded for each shot. The United States Army needed a simpler, faster device, and one adaptable to mass immunization.

Modifications and improvements of the original design have resulted in two automatic devices which are now being tested, one hand-cocked, the other operated by a two-cylinder pump. Minor engineering details still remain to be worked out but it is already clear that administration of vaccines and antibiotics is both feasible and highly desirable.

There are some disadvantages to the jet method. One of these is the occasional failure of the jet to penetrate the skin when it is particularly thick, or is subsurfaced with layers of intradermal fat. A control that will enable the operator to vary the pressure within limits according to the individual being inoculated is being investigated.

Research has not yet revealed who first thought of using a high pressure jet to force medicaments through the skin, but Dr. Joel Warren, of Washington, D. C., chief of virus research at the Army school, believes that automotive lubricants accidentally forced by pressure into mechanics' subcutaneous tissues probably first prompted the inspiration.

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